

Connecticut Department of Transportation
Preliminary Cost Estimating Guidelines - ENGLISH
January 2003

NOTE: WHEN PRELIMINARY COST ESTIMATES ARE PREPARED, THE ENGINEER MUST TAKE INTO ACCOUNT THE TYPE OF PROJECT, ITS COMPLEXITY, GEOGRAPHICAL LOCATION, AND OTHER SPECIAL CONSIDERATIONS THAT MAY APPLY. QUESTIONS ABOUT THESE GUIDELINES SHOULD BE DIRECTED TO THE DEPARTMENT'S COST ESTIMATING UNIT, ATTENTION MR. ROBERT NEVILLE, 860-594-3245

I. CONTRACT ITEMS

A. Roadway Items

<u>Earth Exc.</u>	< 500 C.Y.	\$14 - \$40/C.Y.
	500-2,500 C.Y.	\$10 - \$18/C.Y.
	2,500 – 5,000 C.Y.	\$8 - \$16/C.Y.
	> 5,000 C.Y.	\$6.50 - \$14/C.Y.

<u>Rock Exc.</u>	<500 C.Y.	\$65/C.Y.
	500-2,500 C.Y.	\$25 - \$50/C.Y.
	2,500 – 5,000 C.Y.	\$25 - \$50/C.Y.
	> 5,000 C.Y.	\$18 - \$32/C.Y.

<u>Borrow</u>	< 500 C.Y.	\$20/C.Y.
	500-5,000 C.Y.	\$8 - \$18/C.Y.
	> 5,000 C.Y.	\$5 - \$12/C.Y.

<u>Trench Exc.</u>	0 – 10' Deep	\$10 - \$18/C.Y.
	0 – 20' Deep	\$12 - \$25/C.Y.

<u>Rock in Trench Exc.</u>	\$50 - \$150/C.Y.
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<u>Drainage</u>	
12" R.C.P.	\$35/L.F.
24" R.C.P.	\$50/L.F.
48" R.C.P.	\$90/L.F.
Simple Catch Basins	\$1,400 Ea.
Double Catch Basins	\$1,600 to \$2,000 Ea.
Complex Basins ("CM-2")	\$4,500 to \$6,000 Ea.
Sedimentation Chambers: (Vortechs, etc.)	
10' x 4'	\$15,000 Ea.
13' x 7'	\$24,000 Ea.
18' x 12'	\$45,000 Ea.

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Design Services Division
Cost Estimating Unit

Revised: 01/15/03

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A. Roadway Items (cont.)

Bituminous Concrete (Class 1 & Class 4)

< 100 Ton	\$85/Ton
100 – 1,500 Ton	\$55/Ton
1,500 – 5,000 Ton	\$55/Ton
> 5,000 Ton	\$40 - \$50/Ton
Superpave Mix	Increase prices by 3 - 5%

Subbase

< 500 C.Y.	\$30/C.Y.
500 – 2,000 C.Y.	\$28/C.Y.
> 2,000 C.Y.	\$18/C.Y.

Curbing

Temporary P.C.B.C.	\$22/L.F.
B.C.L.C.	\$2.50 - \$6/L.F.
Concrete Curbing	\$20 - \$28/L.F.
Precast Concrete Barrier Curb (15" x 32")	\$42/L.F.
Precast Concrete Barrier Curb (24" x 32")	\$48/L.F.
F-Shape P.C.B. Curb (20" x 45")	\$80/L.F.
F-Shape P.C.B. Curb (30" x 45")	\$90/L.F.

Guide Railing

Metal Beam Rail (Type R-B 350)	\$14/L.F. (Add \$1.00/L.F. for 10 Ga.)
Merritt Parkway Guiderail	
< 500 L.F.	\$55/L.F.
500 L.F. – 5,000 L.F.	\$48/L.F.
> 5,000 L.F.	\$42/L.F.

Furnishing & Placing Topsoil

< 1,000 S.Y.	\$6.50/S.Y.
1,000 – 5,000 S.Y.	\$5.00/S.Y.
> 5,000 S.Y.	\$3.75/S.Y.

Turf Establishment

< 1,000 S.Y.	\$1.75/S.Y.
1,000 – 5,000 S.Y.	\$1.40/S.Y.
> 5,000 S.Y.	\$0.80/S.Y.

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A. Roadway Items (cont.)

Traffic Signals (Consultation with Traffic Engineering recommended)

New	\$70,000 - \$100,000 per intersection
Minor Modification	\$20,000 per intersection
Major Modification	\$40,000 per intersection

Trafficmen

State Police Officer	\$ 50/hour
Town (City) Police Officer	\$ 50/hour
Uniformed Flagger	\$ 30/hour

Noise Barrier Walls - Timber

Roadway - Use	\$15/S.F.
Structure - Use	\$20/S.F.

Roadway Lighting

Expressway -	\$55/L.F.
Ramps -----	\$40/L.F.

Contaminated Soil & Water – Handling, Removal and Treatment

Obtain a construction cost estimate from the Environmental Compliance Division

Railroad Protection

Metro North & Amtrak	
Flagman:	\$750 per day
Night work (Flagman & Groundman):	\$2,000 per night
All other Railroads	
Flagman:	\$300 - \$600 per day

B. Structure Items

Bridges

Deck	\$75 - \$100/S.F.
Superstructure	\$100 - \$125/S.F.
New Structure	\$210/S.F. of Deck Area

Structure Exc.

<100 C.M.	\$60/C.Y.
100 - 1,000 C.M.	\$27/C.Y.
>1,000 C.M.	\$14/C.Y.

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B. Structure Items (cont.)

Structural Steel

Favorable site conditions \$1.40/lb.
Less than favorable conditions Up to \$2.50/lb.
(Limited access, height restrictions, etc.)

Prestressed Beams \$250/L.F.

Removal of Superstructure

Bridge over Roadway \$25/S.F.
Bridge over Water or Rail \$50/S.F.

Box Culverts

8' x 4' \$600/L.F.
12' x 6' \$800/L.F.

Retaining Walls (Concrete)

(Note: Square footage estimate includes the subsurface area)
Modular Walls and Mechanically Stabilized Earth \$50 - \$60/S.F.
Cast-in-Place Concrete \$60 - \$70/S.F.

Embankment Walls \$28/S.F.

Structural Concrete

Class A

< 50 C.Y. \$800/C.Y.
> 50 C.Y. \$300 - \$600/C.Y.

Class F

< 50 C.Y. \$900/C.Y.
> 50 C.Y. \$500 - \$800/C.Y.

Deformed Steel Bars

< 10,000 LBS. \$1.50/LBS.
10,000 – 50,000 LBS. \$1.15/LBS.
> 50,000 LBS \$0.85/LBS.

Deformed Steel Bars - Epoxy Coated

Add \$0.25/ LB. to above costs.

Removal of Existing Masonry

\$130/ C.Y.

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B. Structure Items (cont.)

Junction Boxes \$12,500 ea.

Temporary Sheet Piling

Reasonable Range \$15 - \$35/S.F.

Cofferdam and Dewatering \$300/L.F.

Deck Patching

Partial Depth Patch \$1,700/C.Y.

Full Depth Patch \$2,000/C.Y.

Cast-in-Place Concrete Piles \$55/L.F.

Steel Piles

Furnishing \$0.35/lb.

Driving \$10/L.F.

Splicing \$400 Ea.

Point Reinforcement \$160 Ea.

Prestressed Deck Units

4' x 3' 3" \$225/L.F.

4' x 2' 3" \$180/L.F.

Lead Health and Protection

Value of Structure Items

<\$1,000,000

\$1,000,000 - \$5,000,000

\$5,000,000 - \$10,000,000

>\$10,000,000

Lead Health & Safety

Estimated Cost

\$25,000

\$50,000

\$100,000

\$200,000

C. Minor Items

? < 30% design completion - Add 20% of (A) Roadway, and (B) Structure Items
Note: If Structure Items are determined on a square foot basis, the 20% is applied only to Roadway Items.

? 30 – 65% design completion - Add 10% of (A) Roadway, and (B) Structure Items

? > 65% design completion – No additive required since the estimate is based on actual quantity take-offs

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D. Lump Sum Items

Clearing & Grubbing	2.0%
M & P of Traffic	3.0%
Mobilization	7.5%
Construction Staking	1.0%

Percentages are applied to the *sum of (A) Roadway + (B) Structures + (C) Minor Items*.

II. INCIDENTALS AND CONTINGENCIES

<u>Project Value</u>	<u>Incidentals</u>	<u>Contingencies</u>
Less than \$1 million	21%	7%
\$1 – 5 million	15%	7%
\$5 – 10 million	12%	5%
Over \$10 million	7%	5%

Percentages are applied to the sum of (A) Roadway Items + (B) Structure Items + (C) Minor Items + (D) Lump Sum Items

III. UTILITIES

Prior to a project's initiation, and at any time thereafter, members of the Department's Utility Section will assist in establishing or updating the preliminary cost estimate for any anticipated utility impacts.

IV. CONSTRUCTION COST

Total Construction Cost is the sum of the following:

- ROADWAY ITEMS
- STRUCTURE ITEMS
- MINOR ITEMS
- INCIDENTALS TO CONSTRUCTION
- CONTINGENCIES
- UTILITIES

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V. ESTIMATE UPDATES

All construction cost estimates should be updated according to the following:

- Semi-annually
- At major milestones in design (PD, SF, FD)
- When the scope of the project changes significantly

VI. COST ADJUSTMENT CRITERIA

Construction cost estimates should be adjusted to the scheduled year of construction using the criteria listed below:

- ? Construction Cost less than \$10 million – increase by 3% annually
- ? Construction Cost of \$10 million or greater – increase by 2.75% annually